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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/587,482

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Lars Stibler

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HAYNES BEFFEL & WOLFELD LLP
P O BOX 366
HALF MOON BAY, CA 94019

EXAMINER

SUGLO, JANET L

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/587,482	Applicant(s) STIBLERT ET AL.	
	Examiner JANET L. SUGLO	Art Unit 2857	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 August 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 March 2008 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>8/31/09</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to because Figures 2, 7-11 are unclear - all detail is lost in shaded areas of each figure listed. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. **Claim 4** is objected to because of the following informalities: Line 2 of claim 4 currently states “wherein said the selected reference signal” and should be amended to state --wherein said selected reference clock signal--. Appropriate correction is required.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. **Claims 1-13, 15 and 16** are rejected under 35 U.S.C. 101 because the claimed invention is neither tied to a machine or apparatus, nor does it perform a transformation. As currently presented, the method steps in **claims 1-13, 15 and 16** need not be performed by a specific machine.

Based on recent Court decisions, it has been held that a § 101 process must (1) be tied to another statutory class (a particular machine or apparatus) or (2) transform underlying subject matter (such as an article or materials) to a different state or thing. Thus, to qualify as a § 101 statutory process, the claim should positively recite the other statutory class (the thing or product) to which it is tied, for example, by identifying the apparatus that accomplishes the method steps, or positively recite the subject matter that is being transformed, for example, by identifying the material that is being changed to a different state.

As such, **claims 1 and 10** only recite a method that includes steps that could be

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purely mental and the claim does not in any way tie the process to another statutory class nor does the claim transform an article to a different state or thing. Such claims are therefore non-statutory under 35 U.S.C. 101.

Claims 2-9, 11-13, 15 and 16 do not remedy the deficiencies of the claims from which they depend, with respect to 35 USC 101.

5. **Claims 14 and 17** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The claims are drawn to a "computer readable medium". The broadest reasonable interpretation of a claim drawn to a computer readable medium covers forms of non-transitory tangible media and transitory propagating signals *per se* in view of the ordinary and customary meaning of computer readable media, particularly when the specification is silent (see MPEP 2111.01). Because the broadest reasonable interpretation covers a signal *per se*, a rejection under 35 USC 101 is appropriate as covering non-statutory subject matter. See 351 OG 212, Feb 23 2010.

The Examiner suggests that Applicant amends the claims as follows: "non-transitory computer readable medium containing computer instructions stored therein for causing a computer processor to perform".

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

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the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 1, 4, 6-8, 10, 11, 14 and 17** are rejected under 35 U.S.C. 103(a) as being unpatentable over Stern et al. (US Patent 6,031,225) (hereinafter "Stern") in view of Blazek (US Patent 4,459,021).

With respect to **claim 1**, Stern teaches a method for determining coordinates of an arbitrarily shaped pattern on a surface in a deflector system (Stern: Figure 3A; col 3, ln 31-56; col 6, ln 24-62), including:

a) selecting a reference clock signal that defines a movement in a first direction (X) (Stern: col 1, ln 59-63; col 4, ln 55-57; col 5, ln 19-22),

b) providing a micro sweep that repeatedly scans the surface in a second direction (Y), perpendicular to the first direction (X) (Stern: col 1, ln 55 – col 2, ln 9; col 3, ln 45-56);

c) selecting a measurement clock signal that is related to the signal used to start each micro sweep in the second direction (Y) (Stern: col 5, ln 17-60),

d) adjusting the speed of the movement in the first direction (X) to determine the distance between the start of each micro sweep (Stern: col 5, ln 17-60),

e) performing a first run that include the steps of:

e1) starting a first micro sweep at a starting position (Stern: Figure 6; col 5, ln 13-26),

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e2) detecting the arbitrarily shaped pattern when the pattern is moved in the first direction (X) relative the deflector system (Stern: Figure 13; col 1, ln 55 – col 2, ln 19; col 3, ln 45-56; col 5, ln 31-52).

Stern does not *explicitly* teach counting scan lines to detect the edge of the pattern. Blazek teaches

e3) generating at least one event if the edge of the pattern is detected (Blazek: col 6, ln 32-38) , and

e4) counting the number of micro sweeps performed until each event is generated (Blazek: col 5, ln 10-18; col 6, ln 50-58), and

f) calculating a coordinate of the edge, for each event, in the first direction (X) using the number of performed micro sweeps (Blazek: col 3, ln 63 – col 4, ln 9; col 6, ln 50-58; col 9, ln 16-25).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Stern to include counting scan lines to detect edges as done by Blazek because this ensure proper alignment in a quick and efficient manner.

With respect to **claim 4**, Stern further teaches said the selected reference signal in step a) corresponds to a known position of the system in the first direction (X) (Stern: col 5, ln 31-52).

With respect to **claim 6**, Stern further teaches the method further includes a compensation for an azimuth error introduced when the micro sweep scans the surface

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in the second direction (Y) during movement of the surface in the first direction (X)

(Stern: Figure 1; Figure 2; col 1, ln 55 – col 2, ln 9; col 3, ln 45-56; col 4, ln 1-9; col 5, ln 17-30).

With respect to **claim 7**, Stern further teaches said compensation is a constant compensation (Stern: Figure 1; Figure 2; col 1, ln 55 – col 2, ln 9; col 3, ln 45-56; col 4, ln 1-9; col 5, ln 17-30). Further it is noted that it would further be obvious to have a constant compensation as the court has held that continuous operation would have been obvious (See MPEP 2144.04).

With respect to **claim 8**, Stern further teaches determining a coordinate in the second direction (Y) using as a reference signal, the signal used to start each micro sweep in the second direction, and as a measurement signal, a pixel clock signal (Stern: col 5, ln 31-52).

With respect to **claim 10**, Stern teaches a method for determining coordinates of an arbitrarily shaped pattern in a deflector system (Stern: Figure 3A; col 3, ln 31-56; col 6, ln 24-62), including:

moving the pattern in a first direction (X), calculating the position of the pattern by carrying out micro sweeps, performed in a perpendicular direction (Y), until the pattern is detected, and determining the coordinates by relating the micro sweeps to the speed of the movement of the pattern (Stern: col 1, ln 55 – col 2, ln 19; col 3, ln 45-56; col 5, ln

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31-52). Stern does not *explicitly* teach counting scan lines to detect the edge of the pattern. Blazek teaches counting scan lines to detect the edge of the pattern (Blazek: col 5, ln 1-18; col 5, ln 63-68; col 6, ln 32-38; col 7, ln 6-40; col 11, ln 14-20). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Stern to include counting scan lines to detect edges as done by Blazek because this ensure proper alignment in a quick and efficient manner.

With respect to **claim 11**, Stern further teaches the speed of movement of the pattern is correlated with the number of micro sweeps performed (Stern: col 1, ln 55 – col 2, ln 9; col 3, ln 45-56; col 5, ln 31-60).

With respect to **claim 14**, Stern further teaches software in a computer-readable medium, adapted to be used in a deflector system for determining the coordinates of an arbitrarily shaped pattern in a deflector system, the software further adapted to carry out the method of claim 1 (Stern: Figure 2; col 3, ln 10-30).

With respect to **claim 17**, Stern further teaches software fixed in a computer-readable medium, adapted to be used in a deflector system for determining the coordinates of an arbitrarily shaped pattern in a deflector system, the software further adapted to carry out the method of claim 10 (Stern: Figure 2; col 3, ln 10-30).

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8. **Claim 9** is rejected under 35 U.S.C. 103(a) as being unpatentable over Stern in view of Blazek and further in view of Okino (US Patent 5,912,467). Stern and Blazek teach all limitations of parent claim 1, but do not specify that the system is used in an e-beam lithography system. Okino teaches the system is used in an e-beam lithography system (Okino: col 4, ln 38-44). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Stern and Blazek to include the e-beam lithography system of Okino because it would allow rapid throughput and maintain the pattern formation characteristics in ideal condition (Okino: col 3, ln 45-52).

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Klein et al. (US Patent 5,093,871) teaches a method and apparatus for effecting background suppression of image data. Scan lines are counted and the edge of an image is detected.

Ohyama (US Patent 4,866,783) teaches a system for detecting the edge of an image.

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Thomas, Jr. et al. (US Patent 3,900,704) teaches an ARBS TV tracker which determines the edge of an image by counting scan lines.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JANET L. SUGLO whose telephone number is (571)272-8584. The examiner can normally be reached on M-F from 9:00am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eliseo Ramos-Feliciano can be reached on 571-272-7925. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/Mohamed Charioui/

Primary Examiner, Art Unit 2857